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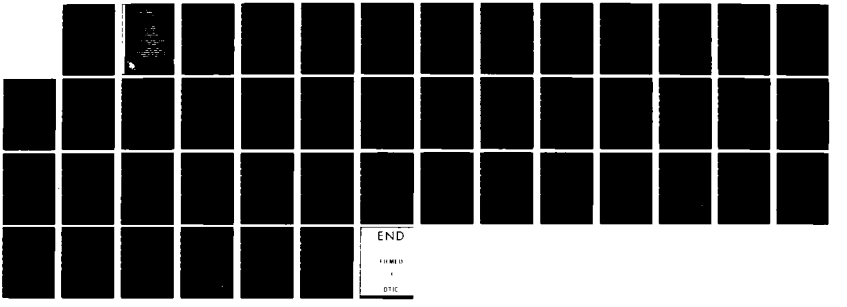

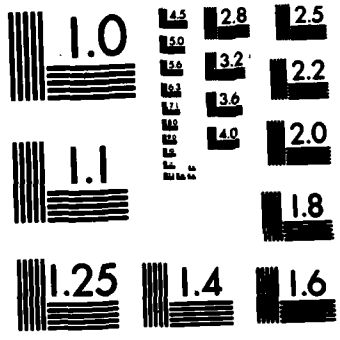

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EVALUATION OF GASOHOL IN U.S. ARMY ADMINISTRATIVE AND TACTICAL VEHICLES

FINAL REPORT
NO. SwR-5739/1

by

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Following the passage of the Defense Authorization Act (PL96-107) U.S. Army Mobility Equipment Research and Development Command (MERADCOM) was tasked by Department of Defense to evaluate gasohol in U.S. Army vehicles. A cooperative program between MERADCOM and the Department of Energy resulted in five vehicle fleet tests at four Army installations conducting an evaluation of gasohol in administrative and tactical vehicles. A test group (gasohol) and control group (gasoline) was established in each fleet except

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20. ABSTRACT (Cont'd)

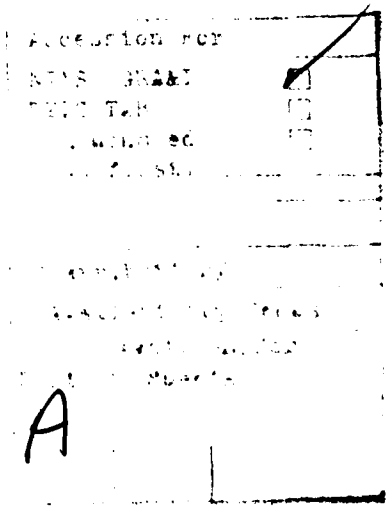
MERADCOM, which only used a test group. There was a grand total of 104 test vehicles and 69 control vehicles in the evaluation. The test groups accumulated 496,985 miles while the control groups accumulated 378,756 miles.

Two of the five installations reported no performance problems for either test or control groups. For the remaining three fleets, 17% (18 of 104) of the test vehicles and 9% (6 of 69) of the control vehicles experienced one or more performance problems. The 18 test vehicles reported 30% more problems than did the 6 control vehicles. This agrees with trends observed in the DOE Reliability Fleet Test in which gasohol-powered vehicles have a higher frequency of incidents in traffic.

Overall indication is that a 10/90 blend of ethanol/unleaded gasoline can provide a slight increase in total available fuel without serious drivability penalties.

FOREWORD

Work covered in this report was conducted during the period 1 April 1980 and 31 Dec. 1981 and was funded by the Department of Energy under Contract No. DE-AC03-79CS50004. Mobility Equipment Research and Development Command Technical Monitors were Mr. Jim Conoly and Dr. Herman Spitzer. The DOE Technical Monitor was Mr. E. Eugene Ecklund.



ACKNOWLEDGEMENTS

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Special acknowledgements are also given to the following Installation Monitors for their assistance throughout the program:

MERADCOM	Mr. Ed Johnson
Ft. Belvoir, VA	Mr. Amos Overton
Ft. Lewis, WA	Mr. Loren Jenkinson
Ft. McCoy, WI	Ms. Rose Acheson
Red River Army Depot, TX	Mr. Gary Schultz

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I. INTRODUCTION

Recognizing a need for a capability to extend the availability of mobility fuels within Department of Defense (DOD), a program was initiated in 1979 to develop the technology required for using alternative fuels. With the passage of the Defense Authorization Act (PL96-107), DOD was directed to purchase alcohol fuels to the maximum extent possible. To implement the Act, the U.S. Army was assigned the lead role for alcohol fuels within DOD. Mobility Equipment Research and Development Command (MERADCOM) initiated a comprehensive program to determine the suitability for using gasohol in all gasoline-consuming military vehicles. Southwest Research Institute (SwRI) was already under contract to the U.S. Department of Energy (DOE) to conduct an Alcohol/Gasoline Reliability Fleet Test Program and a data base for that program had already been established. Therefore, the U.S. Army fleets became part of a cooperative effort in the DOE program to share that data base. MERADCOM selected the test sites and the installations made vehicle assignments to the program. Program management and responsibility remained under MERADCOM although DOE provided funds for SwRI to collect, process and analyze driver survey questionnaires, fuel economy data, and vehicle performance problems at each test site.

II. DATA COLLECTION AND ANALYSIS

Test records were maintained by each installation monitor and submitted to Southwest Research Institute biweekly for analysis. A daily log sheet was completed for each vehicle indicating mileage, fuel and oil added, and driveability performance. The driveability parameters checked by the drivers indicated the occurrence and severity of problems in the following categories:

a. Cranking required to start engine
b. Stalled after starting
c. Stalls in traffic
d. Idle roughness
e. Hesitation
f. Power loss
g. Pinging
h. Dieseling

to record and analyze this data the following two computer programs were utilized:

- Scientific Information Retrieval Program (SIR)
- Statistical Program for Social Sciences (SPSS)

When data sheets were received by SwRI, they were sorted by vehicle identification number, date and odometer reading. The data was then keypunched and added into the computer program, a computer listing was reviewed for errors in the data or gaps in data reporting. It should be noted that at times, erroneous odometer readings were received, and fuel additions were not recorded. Therefore, the test reporting was stopped at the last known fuel fill up and restarted when a new fuel fill up and odometer reading was reported. Following purification of the computer listing, the corrected data were then added to the data base. A flow diagram used for data processing is shown as Figure 1.

III. TEST SITES

For this program, five vehicle fleet locations were identified:

MERADCOM (Tenant at Ft. Belvoir, Va)
Ft. Belvoir, VA
Ft. Lewis, WA
Ft. McCoy, WI
Red River Army Depot, TX

A program monitor was appointed at each installation to collect data sheets for timely submission to SwRI and also to provide continuity between the installation, MERADCOM, and SwRI. Each installation identified vehicles for test (gasohol) and control (gasoline) groups except for MERADCOM, which only utilized test vehicles. Program initiation and completion dates are shown in Table 1.

TABLE 1. INCLUSIVE PROGRAM DATES

Installation	Initiation Date	Completion Date
MERADCOM	1 July 1980	30 Sept 1981
Ft. Belvoir, VA	1 Aug 1980	31 Aug 1981
Ft. Lewis, WA	1 April 1981	31 Dec 1981
Ft. McCoy, WI	1 Aug 1980	31 Aug 1981
Red River Army Depot, TX	1 Feb 1981	28 Feb 1982

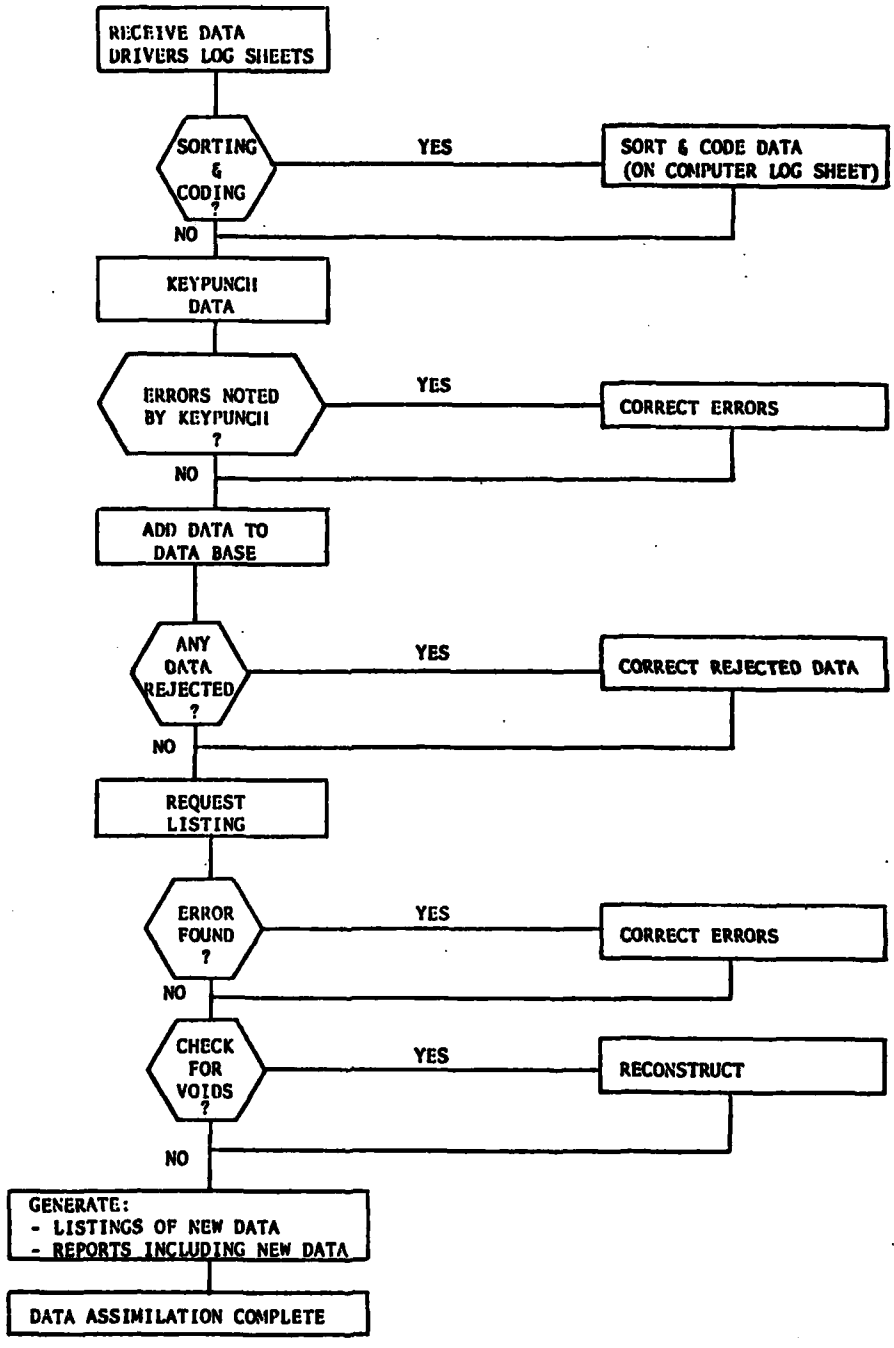


FIGURE 1. DATA PROCESSING PROCEDURES

IV. TEST EQUIPMENT

Each fleet except MERADCOM consisted of two groups; test and control. Table 2 provides test and control group makeup at each installation:

TABLE 2. TEST AND CONTROL VEHICLES

Installation	No. Test Vehicles	No. Control Vehicles
MERADCOM	22	0
Ft. Belvoir	20	20
Ft. Lewis	14	8
Ft. McCoy	28	21
Red River Army Depot	20	20

Both administrative and tactical vehicles were included in the evaluation and the test and control vehicles were selected as evenly as possible by year, make, model and mileage. However, these vehicle groups were not perfectly matched. Tactical vehicles included in this program consisted of M880 series vehicles and M151A2 jeeps. The M880 series are 5/4 ton Dodge pickup trucks in different configuration depending on their original mission, i.e., a 4 x 4 M886 is configured as an ambulance, the M880 is a 4 x 4 pickup and the M890 is a 2 x 2 pickup. The M151A2 is a 1/4 ton 4 x 4 vehicle referred to as a "jeep". More complete vehicle descriptions for each fleet are included as Appendix A.

V. FLEET OPERATIONS

The Energy and Water Resources Laboratory, U.S. Army Mobility Equipment Research and Development Command, Ft. Belvoir, VA selected five fleets at four U.S. Army Installations for this program. These sites were selected to provide a representative mix of commercial design administrative vehicles and tactical vehicles. Each site was to operate on gasohol for a minimum of one year to experience all seasonal climatic conditions. The test groups operated on commercially available gasohol or locally mixed 10 volume percent ethanol (197 minimum proof) and 90 volume percent unleaded gasoline. The control groups operated on commercially available unleaded gasoline. Individual fleet operations were as follows:

MERADCOM With the exception of one M151A2 vehicle, the test group of 22 vehicles were comprised entirely of commercial design administrative vehicles.

No control vehicles were utilized. The test group accumulated 23,174 test miles and utilized 2,402 gallons of gasohol.

Ft. Belvoir Twenty test and twenty control vehicles were identified for this fleet. Only tactical vehicles were utilized as follows:

	M880 Series	M151A2
Test	11	9
Control	13	7

Ft. Lewis There were 14 test (8 M886 and 6 M151A2) vehicles and 8 M886 control vehicles in the Ft. Lewis fleet. Ten M151A2 vehicles had been identified for the program, however, no useful data was ever received on these vehicles. Therefore, for the purpose of data reporting in this report it will be considered that no M151A2 control vehicles were run. Very low mileage was generated on this fleet. The test group accumulated 9,868 miles and used 1,139 gallons of gasohol, while the control vehicles accumulated 8,633 miles using 866 gallons of unleaded gasoline.

Ft. McCoy Only administrative vehicles were utilized in this fleet. There were 28 test vehicles and 21 control vehicles. Although both groups consisted only of administrative vehicles, a good mix of engine size was included. The test group accumulated 244,164 miles on 21,194 gallons of gasohol, while the control group accumulated 158,624 miles using 11,278 gallons of unleaded gasoline.

Red River Army Depot There were no tactical vehicles in the RRAD fleet. There were 20 test and 20 control vehicles, and the fleet make up consisted mostly of sedan and pickup trucks. However, several heavier duty trucks were involved. The test group of 20 vehicles accumulated 163,107 miles using 16,912 gallons of gasohol, while the control group of 20 vehicles accumulated 141,149 miles using 13,171 gallons of unleaded gasoline.

VI. FUEL ECONOMY

Throughout the test period, the 104 test vehicles at all sites accumulated 496,985 miles utilizing 47,700 gallons of gasohol. The 69 control vehicles accumulated 378,756 miles using 33,435 gallons of regular unleaded gasoline.

The overall comparison (all vehicles) indicates that the control vehicles got better fuel economy than test vehicles at a very modest level of significance (α =0.10). This is equally true for control-to-test comparisons at Ft. Lewis and Ft. McCoy (the inference at Ft. McCoy is even stronger, α =0.05). The single exception to this pattern is Ft. Belvoir, where test vehicle mpg exceeded control for α =0.10. Red River Army Depot showed no significant differences. Table 3 presents statistical fuel economy comparisons for all fleets.

Figure 2 presents graphically the average fuel economy by months of operation for all test and control vehicles in all fleets. There appears to be some seasonal effect, since lower fuel economy was obtained during the colder months. However, this effect may possibly be due to driver technique, i.e., leaving the vehicle running when the driver is out of the vehicle to maintain heat in the cab, etc. This would certainly account for higher fuel usage and lower mileage accumulation. An individual vehicle/group summary of miles traveled, fuel economy, and mpg is included as Appendix B.

VII. DRIVER-REPORTED PERFORMANCE PROBLEMS

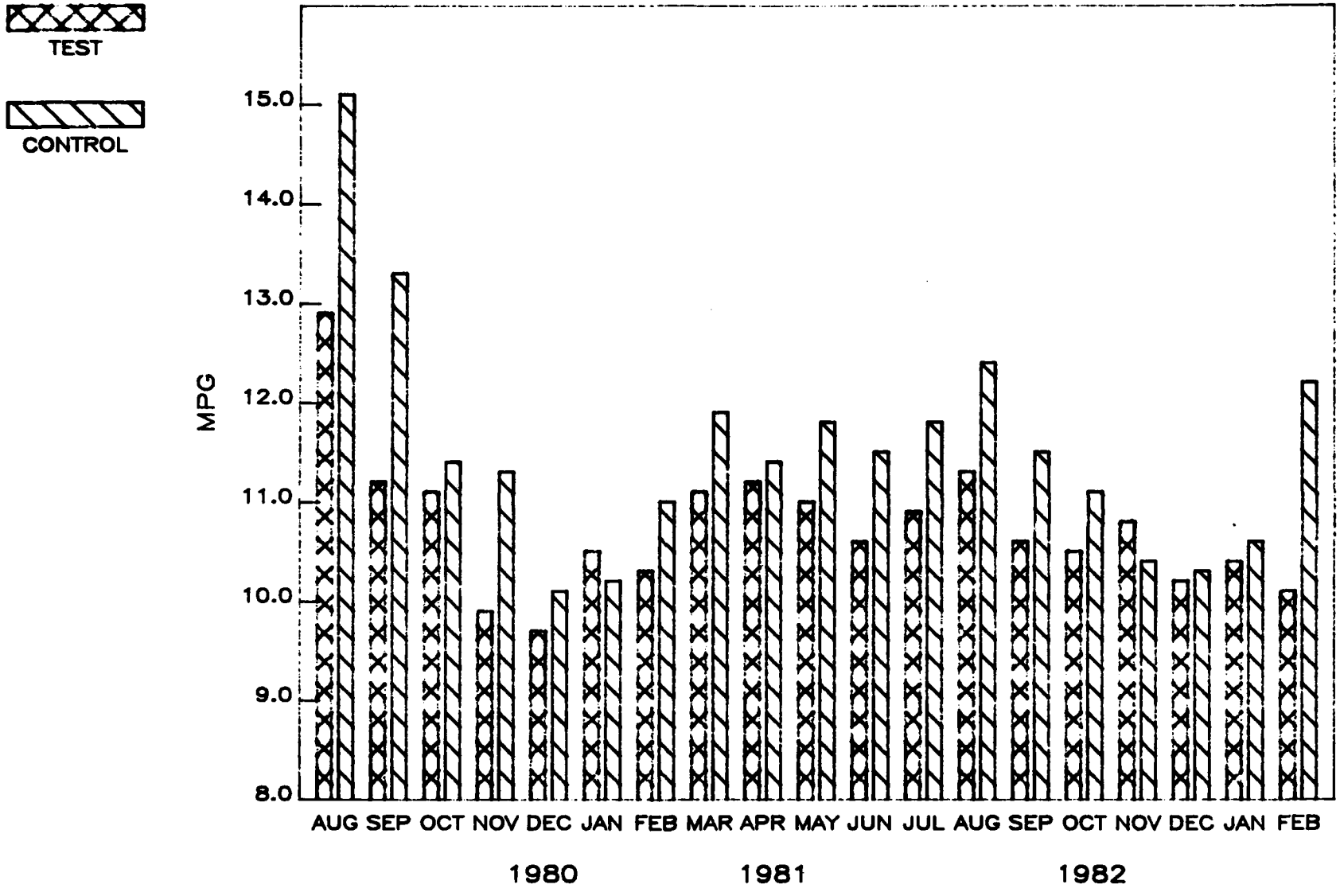
Performance problems recorded from all sites are shown in Table 4. Approximately 17% of the test vehicles experienced one or more performance problems, while approximately 9% of the control vehicles experienced one or more performance problems. However, the total number of occurrences experienced by the 18 test vehicles which reported problems was 30% greater than the 6 control vehicles reporting problems. It is interesting to note that no performance problems in either the test or control groups were reported by Ft. Belvoir, VA or Red River Army Depot, TX. Each of these installations maintained that performance problems were not encountered with either group of vehicles.

These performance problem trends agree with results seen in the DOE Reliability Fleet Test at three test sites that operated on gasohol for over one year and showed test vehicles experienced 48% higher frequency of incidents than the control vehicles. This indicates that gasohol-powered vehicles operating in traffic situations have a significantly higher frequency of incidents than their gasoline-powered counterparts.

TABLE 3. FUEL ECONOMY COMPARISONS

Military Fleet	Vehicle Group	Paired	Sample Size	mpg Mean	mpg Std. Error	DF	t	Level of Significance
ALL VEHICLES* MERADCOM, FT. LEWIS, FT. MCCOY, FT. BELVOIR, RRAD	Test	No	104	10.452	.281			
	Control	No	69	11.381	.438	171	1.86	0.10
FT. LEWIS (ALL VEHICLES)	Test	No	14	9.014	.431			
	Control	No	8	10.086	.872	20	1.75	0.10
FT. MCCOY (ALL VEHICLES)	Test	No	28	12.278	.507			
	control	No	21	14.319	.806	47	2.19	0.05
FT. BELVOIR (ALL VEHICLES)	Test	No	20	9.51	.440			
	Control	No	20	8.59	.260	38	1.76	0.10
RED RIVER ARMY DEPOT (ALL VEHICLES)	Test	No	20	10.78	.725			
	Control	No	20	11.395	.725	38	.58	-

* Includes MERADCOM fleets which has test vehicles only (22 vehicles, 9.6 mpg, S.E. = 0.60)



ALL FLEETS

FIGURE 2. SEASONAL VARIATIONS

TABLE 4. SUMMARY OF PERFORMANCE PROBLEMS

FLEET	Number of Vehicles Reporting Problems/Number of Occurrences Per Fleet Group							
	CRANKING	STALLST*	STALLTRF#	IDLERUFF	HESITATE	POWERLOSS	PINGING	DIESELING
MERADCOM								
Test	3/17	3/17	5/30	5/33	5/31	4/24	0/0	0/0
Control	No Control vehicles assigned							
FT. BELVOIR, VA								
Test	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Control	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FT. LEWIS, WA								
Test	9/63	6/29	9/47	8/53	7/36	7/40	0/0	0/0
Control	5/54	3/18	1/3	1/3	2/2	2/16	0/0	0/0
FT. MCCOY, WI								
Test	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Control	1/8	0/0	1/10	1/1	0/0	1/11	0/0	0/0
RRAD, TX								
Test	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Control	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
ALL FLEETS								
Test **	9/80	9/46	14/77	13/86	12/67	11/64	0/0	0/0
Control ***	6/62	3/18	2/13	2/4	2/2	3/27	0/0	0/0

* Stall after start
\# Stall in traffic
** 18 of 104 test vehicles reported a problem (17%)
*** 6 of 69 control vehicles reported a problem (9%)

VIII. CONCLUSIONS

From the observation made in this program, it has been demonstrated that military vehicles (both administrative and light tactical) can operate satisfactorily on gasohol (a blend of 10% vol. ethanol and 90% vol. unleaded gasoline). Although the test vehicles experienced less fuel economy than the control vehicle fleets, this would still indicate that as a fuel extender, a 10/90 blend could provide a slight increase in total available petroleum fuel without serious driveability penalties to vehicle operations.

APPENDIX A

Fleet Vehicle Listing

FLEET VEHICLE LISTING

MERADCOM

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
TEST GROUP (GASOHOL)				
XI421T	74	DODGE	TRK CREW CAB W200	318.0
WE14T	72	FORD	CUSTOM 500	351.0
WE60T	67	FORD	TRK UTIL M151A2	141.5
WF15T	68	FORD	TRK MAINT F250	240.0
WF40T	69	DODGE	TRK MAINT D200	318.0
WF47T	68	FORD	TRK MAINT F250	240.0
WF49T	78	DODGE	TRK MAINT D200	318.0
A04T	72	AMC	MATADOR	304.0
G23T	74	CHEVROLET	CUSTOM 10 PU	350.0
G41T	74	CHEVROLET	CUSTOM 10 PU	350.0
G49T	74	CHEVROLET	CUSTOM 10 PU	350.0
G54T	74	CHEVROLET	CUSTOM 10 PU	350.0
G60T	65	CHEVROLET	CUSTOM 10 PU	350.0
H18T	72	DODGE	B200 PANEL	318.0
H43T	76	DODGE	B200 PANEL	225.0
H65T	72	CHEVROLET	TRK STEP VAN	350.0
H70T	77	JEEP	CJ-5	232.0
J01T	74	INTER-HARV	TRK S+P 1-200	392.0
I08T	75	DODGE	TRK S+P C-200	318.0
L02T	75	INTER-HARV	TRK VAN 4TON 1600	435.0
L15T	78	FORD	TRK S+P F-600	330.0
M21T	77	GMC	TRK S+P	350.0

TOTAL 22.

FLEET VEHICLE LISTING

FT BELVOIR VA

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
TEST GROUP (GASOHOL)				
SPE214T	76	CHRYSLER	5/4TON 4X4 M880	318.0
SVY132T	76	CHRYSLER	M890 5/4 TON 2X2	318.0
AFB40T	72	AMC	M151A2 JEEP	141.5
HQ321T	72	JOHNSON	1/4TON 4X4 M151A2	141.5
HQ323T	76	CHRYSLER	M890 5/4 TON 2X2	318.0
B301T	76	DODGE	M882 5/4 TON 4X4	318.0
CSH3T	76	DODGE	M886 AMBULANCE	318.0
CSH4T	72	AMC	M151A2 JEEP	141.5
HQ30T	76	CHRYSLER	M890 5/4 TON 2X2	318.0
HQ35T	76	CHRYSLER	5/4TON 4X4 M880	318.0
HQ90T	76	CHRYSLER	M890 5/4 TON 2X2	318.0
A18T	77	CHRYSLER	M887 3/4 TON TRK	318.0
B10T	76	DODGE	M882 5/4 TON 4X4	318.0
HQ3T	72	JOHNSON	M151A2 JEEP	141.5
HQ4T	72	JOHNSON	M151A2 JEEP	141.5
HQ6T	72	JOHNSON	M151A2 JEEP	141.5
A4T	76	CHRYSLER	M882 5/4 TON 4X4	318.0
A6T	76	AMC	M151A2 JEEP	141.5
B6T	72	AMC	M151A2 JEEP	141.5
63T	74	AMC	M151A2 1/4TON TRK	141.5

TOTAL 20.

FLEET VEHICLE LISTING

FT BELVOIR VA

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
CONTROL GROUP (UNLEADED GASOLINE)				
SPE212C	76	CHRYSLER	M880 5/4 TON 4X4	318.0
TOP018C	76	CHRYSLER	M890 5/4 TON 2X2	318.0
TOP011C	76	CHRYSLER	M890 5/4 TON 2X2	318.0
TOP110C	76	CHRYSLER	M890 5/4 TON 2X2	318.0
TOP210C	76	CHRYSLER	M890 5/4 TON 2X2	318.0
SVY10C	72	JOHNSON	M151A2 JEEP	141.5
TOP06C	72	JOHNSON	M151A2 JEEP	141.5
AFB6C	72	AMC	M151A2 JEEP	141.5
A104C	76	CHRYSLER	M882 5/4 TON 4X4	318.0
A224C	76	CHRYSLER	M882 5/4 TON 4X4	318.0
A100C	72	AMC	M151A2 JEEP	141.5
A202C	76	DODGE	M882 5/4 TON 4X4	318.0
A302C	76	DODGE	M882 5/4 TON 4X4	318.0
CSH5C	76	DODGE	M886 AMBULANCE	318.0
CSH6C	72	AMC	M151A2 JEEP	141.5
HQ34C	76	CHRYSLER	M880 5/4 TON 4X4	318.0
HQ40C	72	JOHNSON	M151A21/4TON 4X4	141.5
HQ50C	76	CHRYSLER	M890 5/4 TON 2X2	318.0
A2C	76	CHRYSLER	M882 5/4 TON 4X4	318.0
64C	74	JOHNSON	M151A2 1/4TON TRK	141.5

TOTAL 20.

FLEET VEHICLE LISTING

FT LEWIS WA

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
TEST GROUP (GASOHOL)				
A20T	76	DODGE	TRK AMB 4X4 M886	318.0
A22T	76	DODGE	TRK AMB 4X4 M886	318.0
A28T	76	DODGE	TRK AMB 4X4 M886	318.0
A32T	76	DODGE	TRK AMB 4X4 M886	318.0
A34T	76	DODGE	TRK AMB 4X4 M886	318.0
D20T	76	DODGE	TRK AMB 4X4 M886	318.0
D26T	76	DODGE	TRK AMB 4X4 M886	318.0
D28T	76	DODGE	TRK AMB 4X4 M886	318.0
X30T	70	FORD	TRK UTIL M151A2	141.5
X31T	70	FORD	TRK UTIL M151A2	141.5
X32T	70	FORD	TRK UTIL M151A2	141.5
X33T	70	FORD	TRK UTIL M151A2	141.5
X34T	70	FORD	TRK UTIL M151A2	141.5
X35T	71	FORD	TRK UTIL M151A2	141.5

TOTAL 14.

FLEET VEHICLE LISTING

FT LEWIS WA

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
CONTROL GROUP (UNLEADED GASOLINE)				
B22C	76	DODGE	TRK AMB 4X4 M886	318.0
B28C	76	DODGE	TRK AMB 4X4 M886	318.0
B30C	76	DODGE	TRK AMB 4X4 M886	318.0
B34C	76	DODGE	TRK AMB 4X4 M886	318.0
C20C	76	DODGE	TRK AMB 4X4 M886	318.0
C22C	76	DODGE	TRK AMB 4X4 M886	318.0
C26C	76	DODGE	TRK AMB 4X4 M886	318.0
C30C	76	DODGE	TRK AMB 4X4 M886	318.0

TOTAL 8.

FLEET VEHICLE LISTING

FT MCCOY WI

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
TEST GROUP (GASOHOL)				
A079T	78	AMC	CONCORD SEDAN	258.0
A087T	78	AMC	CONCORD SEDAN	258.0
A091T	78	AMC	CONCORD SEDAN	258.0
A201T	76	FORD	MAVERICK SEDAN	200.0
A202T	76	FORD	MAVERICK SEDAN	200.0
A203T	76	FORD	MAVERICK SEDAN	200.0
A204T	76	FORD	MAVERICK SEDAN	200.0
A205T	76	FORD	MAVERICK SEDAN	200.0
A206T	76	FORD	MAVERICK SEDAN	200.0
A207T	76	FORD	MAVERICK SEDAN	200.0
E018T	75	FORD	STATION WAGON	400.0
E019T	75	FORD	STATION WAGON	400.0
G019T	74	CHEVROLET	1/2TON TRUCK	350.0
G027T	74	CHEVROLET	1/2TON TRUCK	350.0
G077T	78	DODGE	1/2TON TRUCK	225.0
G082T	78	DODGE	1/2TON TRUCK	225.0
H014T	76	DODGE	CARRYALL	318.0
H021T	80	DODGE	CARRYALL	225.0
H024T	80	DODGE	CARRYALL	225.0
H076T	77	CHEVROLET	CARRYALL	250.0
H151T	79	AMC	CJ5 JEEP 4X4	258.0
H182T	80	DODGE	PANEL TRUCK	225.0
H190T	75	AMC	CJ5 JEEP 4X4	232.0

H198T	75	AMC	CJ5 JEEP 4X4	232.0
I014T	78	DODGE	1TON TRUCK 4X4	318.0
I019T	78	DODGE	1TON TRUCK 4X4	318.0
I038T	74	IHC	1TON TRUCK 4X4	345.0
I034T	78	DODGE	1TON TRUCK 4X4	318.0

TOTAL 28.

FLEET VEHICLE LISTING

FT MCCOY WI

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
CONTROL GROUP (UNLEADED GASOLINE)				
A052C	78	AMC	CONCORD SEDAN	258.0
A074C	78	AMC	CONCORD SEDAN	258.0
A077C	78	AMC	CONCORD SEDAN	258.0
A082C	78	AMC	CONCORD SEDAN	258.0
A088C	78	AMC	CONCORD SEDAN	258.0
E020C	75	FORD	STATION WAGON	400.0
E021C	75	FORD	STATION WAGON	400.0
G030C	74	CHEVROLET	1/2TON TRUCK	350.0
G051C	74	CHEVROLET	1/2TON TRUCK	350.0
G084C	78	DODGE	1/2TON TRUCK	225.0
G086C	78	DODGE	1/2TON TRUCK	225.0
H016C	76	DODGE	CARRYALL	318.0
H081C	77	CHEVROLET	CARRYALL	250.0
H152C	79	AMC	CJ5 JEEP 4X4	258.0
H179C	77	DODGE	PANEL TRUCK	225.0
H192C	75	AMC	CJ5 JEEP 4X4	232.0
H194C	75	AMC	CJ5 JEEP 4X4	232.0
H201C	80	DODGE	CARRYALL	225.0
H202C	80	DODGE	CARRYALL	225.0
I021C	78	DODGE	1TON TRUCK 4X4	318.0
I027C	74	IHC	1TON TRUCK 4X4	345.0

TOTAL 21.

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FLEET VEHICLE LISTING

RED RIVER ARMY DEPOT

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
TEST GROUP (GASOHOL)				
CA3421T	72	INTL HARVC	1/2 TON PICKUP TK	345.0
CA8121T	72	INTL HARVC	STAKE TRUCK	345.0
CB9464T	74	CHEVROLET	1/2 TON PICKUP TK	350.0
CB9479T	74	CHEVROLET	1/2 TON PICKUP TK	350.0
CD0429T	76	FORD	UTIL MAINT TK	360.0
CD0431T	75	FORD	UTIL MAINT TK	360.0
CD5729T	76	DODGE	1/2 TON PICKUP TK	225.0
CD6259T	76	DODGE	PANEL TRUCK VAN	318.0
CD7538T	76	GMC	TRACTOR 6500	366.0
CE0013T	76	DODGE	1/2 TON PICKUP TK	225.0
CE0019T	76	DODGE	1/2 TON PICKUP TK	225.0
CE2813T	76	FORD	MAVERICK SEDAN	250.0
CF1409T	77	DODGE	1/2 TON PICKUP TK	225.0
CF1411T	78	DODGE	1/2 TON PICKUP TK	225.0
CF2205T	78	DODGE	1/2 TON PICKUP TK	225.0
CF9734T	76	DODGE	UTIL MAINT TK	226.0
CG1211T	78	DODGE	1/2 TON PICKUP TK	225.0
CG4979T	79	AMC	CONCORD	232.0
E04972T	72	CHEVROLET	1/2 TON PICKUP TK	350.0
K86070T	70	FORD	1/2 TON PICKUP TK	300.0

TOTAL 20.

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FLEET VEHICLE LISTING

RED RIVER ARMY DEPOT

VEHICLE NO.	YEAR	MAKE	MODEL	ENGSIZE
CONTROL GROUP (UNLEADED GASOLINE)				
CA3410C	72	INTL HARVC	3/4 TON CARGO TRK	345.0
CA8108C	72	INTL HARVC	STAKE TRUCK	345.0
CB9450C	74	CHEVROLET	1/2 TON PICKUP TK	350.0
CB9466C	74	CHEVROLET	1/2 TON PICKUP TK	350.0
CD0433C	75	FORD	UTIL MAINT TK	360.0
CD0446C	75	FORD	UTIL MAINT TK	360.0
CD5728C	76	DODGE	1/2 TON PICKUP TK	225.0
CD6181C	76	DODGE	PANEL TRUCK VAN	225.0
CD7536C	76	GMC	TRACTOR 6800	366.0
CE0007C	76	DODGE	1/2 TON PICKUP TK	225.0
CE0017C	76	DODGE	1/2 TON PICKUP TK	225.0
CE2810C	76	FORD	MAVERICK SEDAN	250.0
CF1407C	77	DODGE	1/2 TON PICKUP TK	225.0
CF1410C	77	DODGE	1/2 TON PICKUP TK	225.0
CF2203C	78	DODGE	1/2 TON PICKUP TK	225.0
CF9733C	76	DODGE	1/2 TON PICKUP TK	225.0
CG1208C	78	DODGE	1/2 TON PICKUP TK	225.0
CG4976C	79	AMC	CONCORD	232.0
E04572C	72	CHEVROLET	1/2 TON PICKUP TK	350.0
K84770C	70	FORD	1/2 TON PICKUP TK	300.0
TOTAL 20.				

APPENDIX B

Fleet Vehicle/Group Summary Report

U S ARMY GASOHOL FLEET TESTING PROGRAM

MERADCOM

FLEET VEHICLE/GROUP SUMMARY REPORT-MILES TRAVELED, FUEL CONSUMPTION, AND MPG (MPGRPT)

FOR PERIOD: 07/01/80 THRU 09/30/81

VEHICLE ID NBR/ YEAR/MAKE/MODEL ENG SIZE		AS OF DATE	TOTAL TEST MILES	NO GAL USED	MPG	GAL/ MILE
TEST GROUP						
XI121T						
74 DODGE 318.0	TRK CREW CAB W200	8/27/81	343	34.0	10.1	.0991
WE14T						
72 FORD 351.0	CUSTOM 500	9/22/80	103	12.0	8.6	.1165
WE60T						
67 FORD 141.5	TRK UTIL M151A2	8/18/80	200	14.0	14.3	.0700
WF15T						
68 FORD 240.0	TRK MAINT F250	9/ 9/81	563	67.0	8.4	.1190
WF40T						
69 DODGE 318.0	TRK MAINT D200	7/23/81	284	31.0	9.2	.1092
WF42T						
68 FORD 240.0	TRK MAINT F250	9/18/81	558	68.0	8.2	.1219
WF43T						
78 DODGE 318.0	TRK MAINT D200	9/16/81	1434	155.0	9.3	.1081
AI44T						
72 AMC 304.0	MATADOR	9/14/81	923	76.0	12.2	.0818
G23T						
74 CHEVROLET 350.0	CUSTOM 10 PU	9/ 8/81	692	75.0	9.2	.1084
G41T						
74 CHEVROLET 350.0	CUSTOM 10 PU	1/13/81	2149	188.5	11.4	.0877
G49T						
74 CHEVROLET 350.0	CUSTOM 10 PU	9/18/81	3087	289.0	10.7	.0936
G54T						
74 CHEVROLET 350.0	CUSTOM 10 PU	9/ 3/81	932	87.0	10.7	.0933
G60T						

85 CHEVROLET 350.0 H18T	CUSTOM 10 PU	12/11/80	611	55.0	11.1	.0900
82 DODGE 318.0 H43T	B200 PANEL	6/23/81	588	62.0	9.5	.1054
86 DODGE 225.0 H65T	B200 PANEL	9/ 1/81	1055	67.0	15.7	.0635
82 CHEVROLET 350.0 H20T	TRK STEP VAN	9/ 8/81	228	37.0	6.2	.1623
77 JEEP 232.0 I011	CJ-5	9/16/81	4529	312.9	14.5	.0691
74 INTER-HARV 392.0 I08T	TRK S+P 1-200	9/ 1/81	755	130.0	5.8	.1722
75 DODGE 318.0 L02T	TRK S+P C-200	9/18/81	1336	150.5	9.9	.1126
75 INTER-HARV 345.0 L15T	TRK VAN 4TON 1600	6/22/81	46	8.0	5.8	.1739
78 FORD 330.0 M21T	TRK S+P F-600	7/29/81	819	142.0	5.8	.1734
77 GMC 350.0	TRK S+P	9/ 8/81	1933	342.0	5.7	.1769

COMPOSITE TEST GROUP MILES TRAVELED = 23174.

COMPOSITE TEST GROUP GALLONS USED = 2402.8

COMPOSITE TEST GROUP MPG = 9.6

COMPOSITE TEST GROUP GPM= .1037

U S ARMY GASOHOL FLEET TESTING PROGRAM

FT BELVOIR VA

FLEET VEHICLE/GROUP SUMMARY REPORT-MILES TRAVELED, FUEL CONSUMPTION, AND MPG (MPGRPT)

FOR PERIOD: 08/01/80 THRU 08/31/81

VEHICLE ID NBR/ YEAR/MAKE/MODEL ENG SIZE		AS OF DATE	TOTAL TEST MILES	NO GAL USED	MPG	GAL/ MILE
TEST GROUP						
SPE214T						
76 CHRYSLER	5/4TON 4X4 M880	8/12/81	9359	1089.6	8.6	.1164
318.0						
SVY132T						
76 CHRYSLER	M890 5/4 TON 2X2	3/25/81	736	146.9	5.0	.1996
318.0						
AFB40T						
72 AMC	M151A2 JEEP	7/15/81	1302	147.0	8.9	.1129
141.5						
HQ321T						
72 JOHNSON	1/4TON 4X4 M151A2	7/27/81	2860	188.8	15.1	.0660
141.5						
HQ323T						
76 CHRYSLER	M890 5/4 TON 2X2	8/10/81	2512	250.9	10.0	.0999
318.0						
B301T						
76 DODGE	M882 5/4 TON 4X4	6/28/81	2297	271.0	8.5	.1180
318.0						
CSH3T						
76 DODGE	M886 AMBULANCE	8/14/81	3063	284.1	10.8	.0928
318.0						
CSH4T						
72 AMC	M151A2 JEEP	7/28/81	2291	324.0	7.1	.1414
141.5						
HQ30T						
76 CHRYSLER	M890 5/4 TON 2X2	8/15/81	1239	144.3	8.6	.1165
318.0						
HQ35T						
76 CHRYSLER	5/4TON 4X4 M880	6/26/81	1927	242.5	7.9	.1258
318.0						
HQ90T						
76 CHRYSLER	M890 5/4 TON 2X2	8/30/81	4522	440.0	10.3	.0973
318.0						
A18T						
77 CHRYSLER	M887 5/4 TON TRK	5/27/81	3126	297.0	10.5	.0950
318.0						
B10T						

76 DODGE 318.0 HQ3T	M882 3/4 TON 4X4	6/25/81	7807	818.0	9.2	.1040
72 JOHNSON 141.5 HQ4T	M151A2 JEEP	8/14/81	896	94.5	12.0	.0831
72 JOHNSON 141.5 HQ6T	M151A2 JEEP	8/13/81	2436	256.3	9.5	.1052
72 JOHNSON 141.5 A4T	M151A2 JEEP	6/11/81	1094	121.0	9.0	.1106
76 CHRYSLER 318.0 A6T	M882 3/4 TON 4X4	8/10/81	1920	176.0	10.9	.0917
76 AMC 141.5 B4T	M151A2 JEEP	8/11/81	3605	339.1	10.6	.0941
72 AMC 141.5 63T	M151A2 JEEP	7/23/81	3004	326.0	9.2	.1085
74 AMC 141.5	M151A2 1/4TON TRK	7/11/81	976	115.0	8.5	.1178

COMPOSITE TEST GROUP MILES TRAVELED = 56671.

COMPOSITE TEST GROUP GALLONS USED = 6052.0

COMPOSITE TEST GROUP MPG = 9.4

COMPOSITE TEST GROUP GPM= .1068

CONTROL GROUP

SPE212C							
76 CHRYSLER	M880 3/4 TON 4X4	7/ 3/81	429	56.3	7.6	.1312	
318.0							
TOP012C							
76 CHRYSLER	M890 3/4 TON 2X2	8/24/81	3920	511.4	7.7	.1305	
318.0							
TOP011C							
76 CHRYSLER	M890 3/4 TON 2X2	6/10/81	2342	335.0	7.0	.1430	
318.0							
TOP110C							
76 CHRYSLER	M890 3/4 TON 2X2	8/19/81	1658	219.0	7.6	.1321	
318.0							
TOP210C							
76 CHRYSLER	M890 3/4 TON 2X2	7/22/81	3778	389.0	9.7	.1030	
318.0							
BVY10C							
72 JOHNSON	M151A2 JEEP	7/15/81	1643	208.6	7.9	.1270	
141.5							
TOP06C							
72 JOHNSON	M151A2 JEEP	6/26/81	2041	206.0	9.9	.1009	
141.5							
AFB6C							
72 AMC	M151A2 JEEP	8/12/81	6950	868.0	8.0	.1249	
141.5							
A104C							
76 CHRYSLER	M882 3/4 TON 4X4	5/13/81	1509	214.0	7.1	.1418	
318.0							
A224C							
76 CHRYSLER	M882 3/4 TON 4X4	8/10/81	1517	178.0	8.5	.1173	
318.0							
B100C							
72 AMC	M151A2 JEEP	8/14/81	11226	1198.0	9.4	.1067	
141.5							
B202C							
76 DODGE	M882 3/4 TON 4X4	6/21/81	3266	444.2	7.4	.1360	
318.0							
B302C							
76 DODGE	M882 3/4 TON 4X4	7/30/81	10445	1224.5	8.5	.1172	
318.0							
CSH5C							
76 DODGE	M886 AMBULANCE	8/16/81	2894	223.4	11.6	.0861	
318.0							
CSH6C							
72 AMC	M151A2 JEEP	8/11/81	3244	333.2	9.7	.1027	
141.5							
H034C							
76 CHRYSLER	M880 3/4 TON 4X4	7/20/81	3344	361.8	9.3	.1081	
318.0							
H040C							
72 JOHNSON	M151A21/4TON 4X4	7/ 1/81	2066	222.1	9.3	.1075	
141.5							
H050C							

76 CHRYSLER 318.0 A2C	M890	5/4 TON	2X2	8/12/81	2801	309.0	9.1	.1103
76 CHRYSLER 318.0 64C	M882	5/4 TON	4X4	8/13/81	5050	547.8	9.2	.1085
74 JOHNSON 141.5	M151A2	1/4TON	TRK	6/28/81	527	71.8	7.3	.1362

COMPOSITE CONTROL GROUP MILES TRAVELED = 70350.

COMPOSITE CONTROL GROUP GALLONS USED = 8120.8

COMPOSITE CONTROL GROUP MPG = 8.7

COMPOSITE CONTROL GROUP GPM = .1154

U S ARMY GASOHOL FLEET TESTING PROGRAM

FT LEWIS WA

FLEET VEHICLE/GROUP SUMMARY REPORT-MILES TRAVELED, FUEL CONSUMPTION, AND MPG (MPGRPT)

FOR PERIOD: 04/01/80 THRU 12/31/81

VEHICLE ID NBR/ YEAR/MAKE/MODEL ENG SIZE		AS OF DATE	TOTAL TEST MILES	NO GAL USED	MPG	GAL/ MILE
TEST GROUP						
A20T						
76 DODGE 318.0	TRK AMB 4X4 M886	5/13/81	970	107.0	9.1	.1103
A22T						
76 DODGE 318.0	TRK AMB 4X4 M886	6/29/81	1364	177.0	7.7	.1296
A28T						
76 DODGE 318.0	TRK AMB 4X4 M886	5/11/81	1428	133.0	10.7	.0931
A12T						
76 DODGE 318.0	TRK AMB 4X4 M886	6/19/81	809	96.0	8.4	.1187
A34T						
76 DODGE 318.0	TRK AMB 4X4 M886	11/16/81	1070	136.0	7.9	.1271
D20T						
76 DODGE 318.0	TRK AMB 4X4 M886	10/19/81	1486	162.0	9.2	.1090
D26T						
76 DODGE 318.0	TRK AMB 4X4 M886	6/11/81	618	72.0	8.6	.1165
D28T						
76 DODGE 318.0	TRK AMB 4X4 M886	10/22/81	362	41.0	8.8	.1133
X30T						
70 FORD 141.5	TRK UTIL M151A2	6/26/81	243	26.0	9.3	.1070
X31T						
70 FORD 141.5	TRK UTIL M151A2	7/30/81	485	60.0	8.1	.1237
X32T						
70 FORD 141.5	TRK UTIL M151A2	7/23/81	369	55.0	6.7	.1491
X33T						
70 FORD 141.5	TRK UTIL M151A2	7/30/81	117	10.0	11.7	.0855
X34T						

70 FORD 141.5 X35T	TRK UTIL M151A2	7/30/81	190	15.0	12.7	.0789
71 FORD 141.5	TRK UTIL M151A2	7/30/81	356	49.0	7.3	.1376

COMPOSITE TEST GROUP MILES TRAVELED = 9869.

COMPOSITE TEST GROUP GALLONS USED = 1139.0

COMPOSITE TEST GROUP MPG = 8.7

COMPOSITE TEST GROUP GPM= .1154

CONTROL GROUP

B22C								
76 DODGE 318.0	TRK AMB 4X4 M886	9/ 8/81	1504	166.0	9.1	.1104		
B28C								
76 DODGE 318.0	TRK AMB 4X4 M886	6/15/81	513	51.0	10.1	.0994		
B30C								
76 DODGE 318.0	TRK AMB 4X4 M886	6/24/81	987	93.0	10.6	.0942		
B34C								
76 DODGE 318.0	TRK AMB 4X4 M886	10/19/81	224	25.0	9.0	.1116		
C20C								
76 DODGE 318.0	TRK AMB 4X4 M886	11/ 5/81	2694	271.0	9.9	.1006		
C22C								
76 DODGE 318.0	TRK AMB 4X4 M886	7/14/81	1490	150.0	9.9	.1007		
C26C								
76 DODGE 318.0	TRK AMB 4X4 M996	11/ 5/81	779	84.0	9.3	.1078		
C30C								
76 DODGE 318.0	TRK AMB 4X4 M886	10/20/81	442	26.0	17.0	.0588		

COMPOSITE CONTROL GROUP MILES TRAVELED = 8633.

COMPOSITE CONTROL GROUP GALLONS USED = 866.0

COMPOSITE CONTROL GROUP MPG = 10.0

COMPOSITE CONTROL GROUP GPM = .1003

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U S ARMY GASOHOL FLEET TESTING PROGRAM

FT MCCOY WI

FLEET VEHICLE/GROUP SUMMARY REPORT-MILES TRAVELED, FUEL CONSUMPTION, AND MPG (MPGRPT)

FOR PERIOD: 08/01/80 THRU 08/31/81

VEHICLE ID NBR/ YEAR/MAKE/MODEL ENG SIZE		AS OF DATE	TOTAL TEST MILES	NO GAL USED	MPG	GAL/ MILE
TEST GROUP						
A0?9T 78 AMC 258.0	CONCORD SEDAN	8/10/81	2286	123.3	18.5	.0539
A0887T 78 AMC 258.0	CONCORD SEDAN	8/13/81	4821	320.3	15.1	.0664
A0991T 78 AMC 258.0	CONCORD SEDAN	8/12/81	10331	795.4	13.0	.0770
A201T 76 FORD 200.0	MAVERICK SEDAN	8/10/81	13358	921.3	14.5	.0690
A202T 76 FORD 200.0	MAVERICK SEDAN	5/30/81	7315	544.8	13.4	.0745
A203T 76 FORD 200.0	MAVERICK SEDAN	8/15/81	14684	1119.4	13.1	.0762
A204T 76 FORD 200.0	MAVERICK SEDAN	8/ 7/81	8200	648.9	12.6	.0791
A205T 76 FORD 200.0	MAVERICK SEDAN	8/ 6/81	12067	1021.0	11.8	.0846
A206T 76 FORD 200.0	MAVERICK SEDAN	8/16/81	16433	1363.0	12.1	.0829
A207T 76 FORD 200.0	MAVERICK SEDAN	8/15/81	10794	872.1	12.4	.0808
E018T 75 FORD 400.0	STATION WAGON	8/16/81	2840	246.5	11.5	.0868
E019T 75 FORD 400.0	STATION WAGON	8/11/81	2200	231.6	9.5	.1053
G014T						

74 CHEVROLET 350.0 G027T	1/2TON TRUCK	7/30/81	8726	1503.4	5.8	.1723
74 CHEVROLET 350.0 G077T	1/2TON TRUCK	8/17/81	13918	1985.2	7.0	.1426
78 DODGE 225.0 G082T	1/2TON TRUCK	8/14/81	8555	573.3	14.9	.0670
78 DODGE 225.0 H014T	1/2TON TRUCK	5/ 4/81	3612	260.6	13.9	.0721
76 DODGE 318.0 H021T	CARRYALL	8/ 7/81	8855	807.7	11.0	.0912
80 DODGE 225.0 H024T	CARRYALL	8/14/81	14321	952.6	15.0	.0665
80 DODGE 225.0 H076T	CARRYALL	8/13/81	14263	1043.6	13.7	.0732
77 CHEVROLET 250.0 H151T	CARRYALL	8/ 2/81	3404	328.8	10.4	.0966
79 AMC 258.0 H182T	CJ5 JEEP 4X4	8/16/81	12651	956.1	13.2	.0756
80 DODGE 225.0 H190T	PANEL TRUCK	8/11/81	13722	853.1	16.1	.0622
75 AMC 232.0 H195T	CJ5 JEEP 4X4	8/17/81	3059	240.3	12.7	.0786
78 DODGE 318.0 I014T	CJ5 JEEP 4X4	8/12/81	1340	98.0	13.7	.0731
78 DODGE 318.0 I019T	1TON TRUCK 4X4	8/16/81	10607	1012.4	10.5	.0954
78 DODGE 318.0 I032T	1TON TRUCK 4X4	8/15/81	17197	1892.2	9.1	.1100
74 IHC 345.0 I034T	1TON TRUCK 4X4	7/30/81	3036	319.4	9.5	.1052
78 DODGE 318.0	1TON TRUCK 4X4	8/ 5/81	1569	159.7	9.8	.1018

COMPOSITE TEST GROUP MILES TRAVELED = 244164.

COMPOSITE TEST GROUP GALLONS USED = 21194.0

COMPOSITE TEST GROUP MPG = 11.5

COMPOSITE TEST GROUP GPM= .0868

CONTROL GROUP

A052C 78 AMC 258.0	CONCORD SEDAN	8/ 7/81	4047	191.5	21.1	.0473
A024C 78 AMC 258.0	CONCORD SEDAN	8/13/81	9495	434.9	21.8	.0458
A077C 78 AMC 258.0	CONCORD SEDAN	8/10/81	9189	520.8	17.6	.0567
A082C 78 AMC 258.0	CONCORD SEDAN	8/11/81	6996	361.7	19.3	.0517
A088C 78 AMC 258.0	CONCORD SEDAN	8/18/81	11170	583.9	19.1	.0523
E020C 75 FORD 400.0	STATION WAGON	8/17/81	13219	1002.8	13.2	.0759
E021C 75 FORD 400.0	STATION WAGON	8/16/81	7887	648.6	12.2	.0822
G030C 74 CHEVROLET 350.0	1/2TON TRUCK	8/14/81	4628	480.1	9.6	.1037
G051C 74 CHEVROLET 350.0	1/2TON TRUCK	8/ 5/81	1864	260.4	7.2	.1397
G094C 78 DODGE 225.0	1/2TON TRUCK	8/ 7/81	5074	323.6	15.7	.0638
G086C 79 DODGE 225.0	1/2TON TRUCK	8/ 6/81	12232	936.8	13.1	.0766
H016C 76 DODGE 318.0	CARRYALL	7/27/81	5529	478.4	11.6	.0865
H081C 77 CHEVROLET 250.0	CARRYALL	8/10/81	3910	304.0	12.9	.0777
H152C 74 AMC 258.0	CJ5 JEEP 4X4	8/ 3/81	3430	272.9	12.6	.0796
H179C 77 DODGE 225.0	PANEL TRUCK	8/ 7/81	11869	754.4	15.7	.0639
H132C 75 AMC 232.0	CJ5 JEEP 4X4	8/18/81	4231	352.8	12.0	.0834
H194C 75 AMC 232.0	CJ5 JEEP 4X4	6/30/81	2876	205.6	14.0	.0715
H201C						

80 DODGE 225.0 H202C	CARRYALL	8/14/81	8159	561.9	14.5	.0689
80 DODGE 225.0 I021C	CARRYALL	8/14/81	14287	916.6	15.6	.0642
78 DODGE 319.0 I027C	1TON TRUCK 4X4	8/14/81	11605	1034.3	11.2	.0891
74 IHC 345.0	1TON TRUCK 4X4	8/13/81	6983	651.9	10.7	.0933

COMPOSITE CONTROL GROUP MILES TRAVELED = 158624.

COMPOSITE CONTROL GROUP GALLONS USED = 11277.8

COMPOSITE CONTROL GROUP MPG = 14.1

COMPOSITE CONTROL GROUP GPM = .0711

U S ARMY GASOHOL FLEET TESTING PROGRAM

RED RIVER ARMY DEPOT

FLEET VEHICLE/GROUP SUMMARY REPORT-MILES TRAVELED, FUEL CONSUMPTION, AND MPG (MPGRPT)

FOR PERIOD: 02/01/81 THRU 02/28/82

VEHICLE ID NBR/ YEAR/MAKE/MODEL ENG SIZE		AS OF DATE	TOTAL TEST MILES	NO GAL USED	MPG	GAL/ MILE
TEST GROUP						
CA3421T						
72 INTL HARVC 345.0	1/2 TON PICKUP TK	2/24/82	3873	483.0	8.0	.1247
CA8121T						
72 INTL HARVC 345.0	STAKE TRUCK	2/24/82	6332	998.2	6.3	.1576
CB9464T						
74 CHEVROLET 350.0	1/2 TON PICKUP TK	2/26/82	8064	877.8	9.2	.1089
CB9475T						
74 CHEVROLET 350.0	1/2 TON PICKUP TK	2/24/82	8275	1259.2	6.6	.1522
CD0429T						
76 FORD 360.0	UTIL MAINT TK	2/25/82	5833	666.0	8.8	.1142
CD0431T						
75 FORD 360.0	UTIL MAINT TK	2/19/82	9385	1123.2	8.4	.1197
CD5729T						
76 DODGE 225.0	1/2 TON PICKUP TK	2/26/82	12061	805.9	15.0	.0668
CD6259T						
76 DODGE 318.0	PANEL TRUCK VAN	2/12/82	5058	492.8	10.3	.0974
CD7598T						
76 GMC 366.0	TRACTOR 6500	2/23/82	8958	2641.9	3.4	.2949
CE0013T						
76 DODGE 225.0	1/2 TON PICKUP TK	2/27/82	5244	342.9	15.3	.0654
CE0019T						
74 DODGE 225.0	1/2 TON PICKUP TK	2/10/82	5862	410.8	14.3	.0701
CE2813T						
76 FORD 250.0	MAVERICK SEDAN	1/25/82	28056	2304.7	12.2	.0821
CF1499T						

77 DODGE 225.0 CF1411T	1/2 TON PICKUP TK	2/18/82	10652	757.5	14.1	.0711
78 DODGE 225.0 CF2205T	1/2 TON PICKUP TK	2/26/82	11332	739.2	15.3	.0652
78 DODGE 225.0 CF9734T	1/2 TON PICKUP TK	2/19/82	10246	1024.3	10.0	.1000
76 DODGE 225.0 CG1211T	UTIL MAINT TK	2/ 8/82	3447	292.5	11.8	.0849
78 DODGE 225.0 CG4979T	1/2 TON PICKUP TK	2/19/82	5848	473.9	12.3	.1010
74 AMC 232.0 CD4972T	CONCORD	2/26/82	7932	589.3	13.5	.0743
72 CHEVROLET 350.0 KB60707T	1/2 TON PICKUP TK	2/18/82	2446	263.5	9.3	.1077
70 FORD 300.0	1/2 TON PICKUP TK	2/16/82	4203	365.3	11.5	.0869

COMPOSITE TEST GROUP MILES TRAVELED = 163107.

COMPOSITE TEST GROUP GALLONS USED = 16911.9

COMPOSITE TEST GROUP MPG = 9.6

COMPOSITE TEST GROUP GPM= .1037

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CONTROL GROUP

CA3410C
72 INTL HARVC 3/4 TON CARGO TRK 2/16/82 2717 556.4 4.9 .2048
345.0
CA8108C
72 INTL HARVC STAKE TRUCK 2/22/82 5535 721.6 7.7 .1304
345.0
CB9450C
74 CHEVROLET 1/2 TON PICKUP TK 2/19/82 8225 873.1 9.4 .1062
350.0
CB9466C
74 CHEVROLET 1/2 TON PICKUP TK 2/26/82 7775 734.7 10.6 .0945
350.0
CD0433C
75 FORD UTIL MAINT TK 2/24/82 5166 529.1 9.8 .1024
360.0
CD0446C
75 FORD UTIL MAINT TK 2/19/82 4940 590.5 8.4 .1195
360.0
CD5728C
76 DODGE 1/2 TON PICKUP TK 2/27/82 6660 673.7 9.9 .1009
225.0
CD6181C
76 DODGE PANEL TRUCK VAN 2/26/82 5446 425.0 12.8 .0780
225.0
CD7536C
76 GMC TRACTOR 6500 1/26/82 7290 1549.1 4.7 .2125
366.0
CE0007C
76 DODGE 1/2 TON PICKUP TK 2/12/82 5301 350.5 15.1 .0661
226.0
CE0017C
76 DODGE 1/2 TON PICKUP TK 2/17/82 5446 364.6 14.9 .0669
225.0
CE2810C
76 FORD MAVERICK SEDAN 7/24/81 2820 205.8 13.7 .0730
250.0
CF1407C
77 DODGE 1/2 TON PICKUP TK 2/10/82 12668 953.7 13.3 .0753
225.0
CF1410C
77 DODGE 1/2 TON PICKUP TK 2/10/82 8327 541.3 15.4 .0650
225.0
CF2203C
78 DODGE 1/2 TON PICKUP TK 1/11/82 10223 995.5 10.3 .0969
225.0
CF9233C
76 DODGE 1/2 TON PICKUP TK 2/ 8/82 5323 455.2 11.7 .0855
225.0
CG1208C
78 DODGE 1/2 TON PICKUP TK 2/23/82 7276 449.2 16.2 .0617
225.0
CG4976C

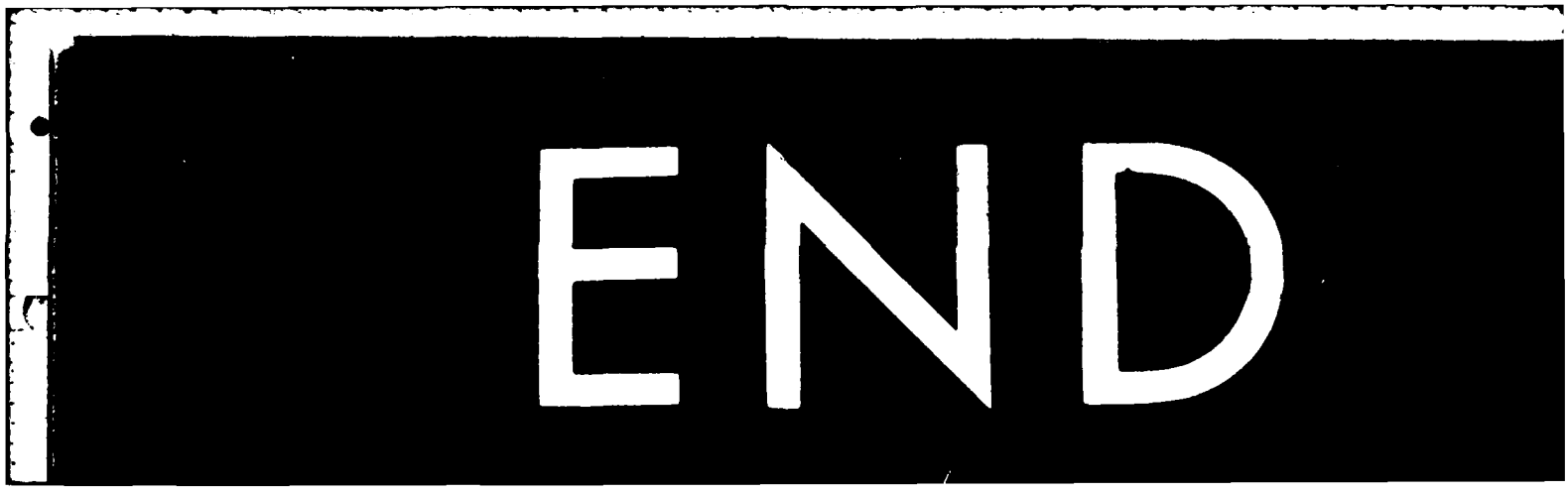
79 AMC 232.0	CONCORD	2/23/82	18644	1289.3	14.5	.0692
E04572C 72 CHEVROLET 350.0	1/2 TON PICKUP TK	2/26/82	4605	416.0	11.1	.0903
K84790C 70 FORD 300.0	1/2 TON PICKUP TK	2/ 2/82	6690	496.7	13.5	.0742

COMPOSITE CONTROL GROUP MILES TRAVELED = 141149.

COMPOSITE CONTROL GROUP GALLONS USED = 13171.0

COMPOSITE CONTROL GROUP MPG = 10.7

COMPOSITE CONTROL GROUP GPM = .0933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